IN THE CLAIMS

The following listing of the claims is provided in accordance with 37 C.F.R. 1.121:

1.-4. (canceled).

5. (original) A method for resetting a state of charge (SOC) calculation for a designated energy storage bank of an energy storage system of a vehicle, the method comprising:

during operation of the vehicle, completely discharging and completely charging the designated energy storage bank;

maintaining the designated energy storage bank at a predetermined high terminal voltage for a specified period of time; and

following said specified period of time, defining a calculated, reset SOC for the designated energy storage bank to be a known SOC capacity.

6. (original) The method of claim 5, wherein said completely discharging the designated energy storage bank further comprises discharging energy from the designated energy storage bank to at least one of: one or more available energy storage banks in the energy storage system, a vehicle motoring operation, and a resistive grid.

7. (original) The method of claim 6, wherein:

said one or more available energy storage banks are a preferred discharging sink for the designated energy storage bank over said vehicle motoring operation and said resistive grid; and

said vehicle motoring operation is a preferred discharging sink for the designated energy storage bank over said resistive grid.

8. (original) The method of claim 5, wherein said completely charging the designated energy storage bank further comprises supplying charging energy to the designated energy storage bank from at least one of: one or more available energy storage banks in the energy storage system, a vehicle dynamic braking operation, and a combustion engine of the vehicle.

9. (original) The method of claim 8, wherein:

said one or more available energy storage banks are a preferred charging source for the designated energy storage bank over said vehicle dynamic braking operation and said combustion engine; and

said vehicle dynamic braking operation is a preferred charging source for the designated energy storage bank over said combustion engine.

10.-26. (canceled).

27. (previously presented) A method for controlling one or more energy storage banks in a vehicle energy storage system, the method comprising:

determining a remaining life cycle for each of the energy storage banks; and

allocating a total amount of commanded charging and discharging power commanded among each of the energy storage banks in accordance with said determined remaining life cycle thereof, wherein a flow of said power is prioritized in accordance with the one or more energy storage banks having the highest remaining life cycle.

28. (canceled).

29. (original) The method of claim 27, further comprising:

determining an initial participation factor for each of the energy storage banks, said initial participation factor representing the relative contribution of a given storage bank with respect to the remaining storage banks;

wherein said initial participation factor for each energy storage bank is determined based upon at least one of: a power rating thereof, an energy rating thereof, a calculated state of charge (SOC) thereof, and stored energy information thereof.

30. (original) The method of claim 29, further comprising:

determining a remaining life cycle for each of the energy storage banks; and

based on said determined remaining life cycle for each of the energy storage banks, generating an adjusted participation factor for one or more of the energy storage banks;

wherein an initial participation factor for a first storage bank having a greater remaining life cycle is increased with respect to an initial participation factor for a second storage bank having a lesser remaining life cycle.

31. (currently amended) A method for characterizing and projecting remaining cycle life for vehicle storage battery, the method comprising:

performing a series of initial battery characterization tests; wherein said series of initial battery characterization tests further comprises:

a first test, said first test comprising an initial commissioning charge and capacity test;

a second test, said second test comprising a full recharge and partial discharge test; and

a third test, said third test comprising a partial charge and partial discharge test; wherein during the performance of said third test, if an output voltage of the storage battery drops to a first cut-off value, then said third test is aborted and said first test is repeated;

performing a series of periodic battery tests during the operating life of the vehicle storage battery;

comparing the results of said periodic battery tests with said initial battery characterization tests; and

projecting a remaining cycle life for the vehicle storage battery.

32. (canceled).

33. (currently amended) The method of claim [[32]]31, further comprising adding water to the vehicle storage battery following completion of said first test, if the water level thereof is below a minimum defined level.

34. (canceled).

35. (currently amended) The method of claim [[34]]31, wherein during the performance of said third test, if an output voltage of the storage battery drops to a second cut-off value, then said third test is aborted and said first test is repeated.

36. (original) The method of claim 35, wherein said first cut-off value is related to a determined level of discharge current spiking associated with said third test, and said second cut-off value is related to a final C rate discharge portion associated with said third test.

37. (original) The method of claim 36, further comprising:

repeating said third test for a least a first number, N1 of iterations, wherein N1 represents a specified number of cycles between an initial commissioning charge and a scheduled maintenance of the storage battery; and

following at least N1 iterations of said third test, continuing subsequent iterations of said third test until a battery output quantity falls below a corresponding rated quantity of the storage battery, at which time a second number, N2 of total iterations is recorded.

38. (original) The method of claim 37, wherein said rated quantity of the storage battery corresponds to one of: a percentage of rated power, and a percentage of rated energy.

39. (original) The method of claim 38, wherein said series of periodic battery tests further comprises said first test, said second test and said third test.